

Serial No. 09/738,611  
Response dated November 25, 2003  
Reply to Office Action of 08/25/03

Docket No. 5000-4831

**IN THE CLAIMS**

**Please amend claim 1 as follows:**

1. (Currently Amended) An air supply system for a fuel cell comprising:

a housing,

an air supply mechanism having an air supply chamber adapted to supply an oxygen-containing gas to a fuel cell and a water supply mechanism for supplying water to said air supply mechanism to seal and cool said air supply chamber,

wherein said water supply mechanism separates water from the exhaust gas discharged from said fuel cell and supplies said water to said air supply mechanism, said air supply mechanism being integrated with said water supply mechanism, both of said air supply mechanism and said water supply mechanism being formed in said housing.

2. (Original) An air supply system for a fuel cell according to claim 1, wherein said air supply mechanism can change the amount of the oxygen-containing gas per unit power.

3. (Original) An air supply system for a fuel cell according to claim 1, wherein said water supply mechanism has a liquefaction unit for liquefying the water vapor contained in the exhaust gas discharged from the fuel cell to thereby produce water.

4. (Original) An air supply system for a fuel cell according to claim 3, wherein said liquefaction unit is of a centrifugal separation type and generates a turbulent flow of the exhaust gas by centrifugal force which flow collides with the inner peripheral surface of said liquefaction unit thereby to liquefy the water vapor.

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5. (Original) An air supply system for a fuel cell according to claim 1, wherein said water supply mechanism includes a regeneration mechanism for expanding the exhaust gas discharged from said fuel cell and assisting the power to said air supply mechanism, and said regeneration mechanism includes a regeneration chamber adapted to supply the water generated by the expansion of said exhaust gas to said air supply mechanism.

6. (Original) An air supply system for a fuel cell according to claim 1, wherein said water supply mechanism can change the amount of water supplied.

7. (Original) An air supply system for a fuel cell according to claim 5, wherein said air supply mechanism and said regeneration mechanism are configured to operate on the same drive shaft.

8. (Original) An air supply system for a fuel cell according to claim 7, wherein at least one of said air supply mechanism and said regeneration mechanism is of a scroll type.

9. (Original) An air supply system for a fuel cell according to claim 8, wherein said air supply mechanism and said regeneration mechanism are of a scroll type; said air supply mechanism includes a housing, one surface of a side plate orbited by a drive shaft and a first spiral member protruded from said surface; and said regeneration mechanism includes said housing, the other surface of said side plate and a second spiral member protruded from said other surface.

10. (Original) An air supply system for a fuel cell according to claim 7, wherein at least one of said air supply mechanism and said regeneration mechanism is of a vane type.

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11. (Original) An air supply system for a fuel cell according to claim 10, wherein said air supply mechanism and said regeneration mechanism are of a vane type; said air supply mechanism includes a housing, a first rotor rotated by a drive shaft and a first vane adapted to protrude radially from said first rotor; and said regeneration mechanism includes said housing, a second rotor rotating on the same axis as said first rotor and a second vane adapted to protrude radially from said second rotor.

**Please add new claims 12, 13, and 14.**

12. (New) An air supply system for a fuel cell according to claim 1, wherein said air supply mechanism communicates with said water supply mechanism through a water supply hole formed in said housing.

13. (New) An air supply system for a fuel cell according to claim 1, wherein said housing is formed by a plurality of housing members, and said water supply mechanism and a part of said air supply mechanism are formed in the same housing member.

14. (New) An air supply system for a fuel cell according to claim 3, wherein said liquefaction unit is a cylinder shape, and a bottom portion of said liquefaction unit communicates with a compression chamber of said air supply mechanism through a water supply hole and said water is supplied from the bottom portion of said liquefaction to the compression chamber of said air supply mechanism by means of gravity.